

528 Rec'd PCT/PTO 26 DEC 2000

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-- 20.                   A polynucleotide assay apparatus characterized in that it has a polynucleotide detecting cell provided with a first plate (11) whereon a first electrode (111) to which different DNA probes (13, 14, 15, 16) are fixed in a plurality of luminous areas (3, 4, 5, 6) differing with the type of DNA probe is formed and a second substrate which is arranged opposite to said first electrode and whereon a plurality of second electrodes (113-1, 113-2) are formed opposite to said plurality of luminous areas; a voltage applying unit (44) for applying a voltage between said first electrode and said second electrode; and an optical detector (33, 34, 35, 36, 43) for trapping said target polynucleotide through hybridization between said